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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/767,248	01/28/2004	Hieu Van Tran	2102397-992820	4785
26379	7590	01/06/2006	EXAMINER	
DLA PIPER RUDNICK GRAY CARY US, LLP			NGUYEN, KHAI M	
2000 UNIVERSITY AVENUE			ART UNIT	
E. PALO ALTO, CA 94303-2248			PAPER NUMBER	
			2819	

DATE MAILED: 01/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No.	Applicant(s)	
	10/767,248	TRAN ET AL.	
	Examiner	Art Unit	
	Khai M. Nguyen	2819	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12/19/2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 14-18 is/are allowed.
- 6) ☒ Claim(s) 1-2, 5-6, 8-12, 19-20, and 24 is/are rejected.
- 7) ☒ Claim(s) 3,4,7,13 and 21-23 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-24 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

- a. Claims 1-2 and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by MacBeth (US 5,982,230) ("MacBeth").

Regarding claim 1, MacBeth discloses a multi-operational amplifier system (Figs. 1-6) comprising: a plurality of operational/differential amplifiers (60/70) each having inputs (inverting/non-inverting inputs); and a controller (including switches 90-92 – column 3, lines 56-62) configured to interconnect the inputs of the amplifiers (60/70) so that to form an adaptive input range of the system (abstract).

Regarding claim 2, MacBeth discloses the non-inverting input (62) of the amplifier (60) is coupled to the inverting input (72) of the amplifier (70) and the inverting input (61) of the amplifier (60) is coupled to the non-inverting input (71) of the amplifier (70) (when switches 90-91 are in the upper positions as shown in Fig. 1).

Regarding claim 24, MacBeth discloses a multi-operational (multi means more than one) amplifier system (Figs. 1-6) comprising: a plurality operational/differential

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amplifiers (60/70); and a configuration circuit (including switches 90-92) to adaptively interconnect the amplifiers (by modifications of the switches), wherein the configuration/configurable circuit comprising digital control signals (col. 3, lines 56-62).

b. Claims 9-12, and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Kibayashi et al. (US 5,256,987) ("Kibayashi").

Regarding claim 9, Kibayashi discloses a multi-operational amplifier system (Fig. 2) comprising:

a plurality of operational (note: the word 'operational' means these amplifiers are available and in working condition – see an English dictionary) amplifiers ($15_1 \dots 15_m$), one (15k) of the amplifiers having a fixed bias (see Fig. 5, element 45 supplies a fixed bias of –5V to the amplifier 15k – column 6, lines 45-50);

another of the operational amplifiers (channel 15k +1 or 15k-1 – see column 6, lines 8-11) having an adaptively switchable bias (of +5V; +10; or – 300V by modifications of switches 44 and 46 – see column 6, lines 8-52); and

a controller (including control circuits 22, 211, and 212) to adaptively interconnect the plurality of operational amplifiers (between terminals 10/20 via the distributor 14 and combiner 19) and to select the adaptively switchable bias (of +5V; +10; or – 300V).

Regarding claim 10, Kibayashi discloses a multi-operational amplifier system (Figs. 2 & 5) comprising:

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a plurality of operational amplifiers ($15_1 \dots 15_m$), one (channel 15_k , wherein $k = 1 \dots m$) of the amplifiers having a switchable bias (of +5V; +10; or – 300V by modifications of switches 44 and 46 – see column 6, lines 8-52);

another of the operational amplifiers (channel $15_k + 1$ or $15_k - 1$ – see column 6, lines 8-11) having a switchable bias (of +5V; +10; or –300V by modifications of switches 44 and 46 – see column 6, lines 8-52); and

a controller (including control circuits 22, 211, and 212) to adaptively interconnect the plurality of operational amplifiers (between terminals 10/20 via the distributor 14 and combiner 19) and to select the adaptively switchable bias (of +5V; +10; or – 300V).

Regarding claim 11, Kibayashi discloses a multi-operational amplifier system (Figs. 2 & 5) comprising:

a plurality of operational amplifiers ($15_1 \dots 15_m$), one (channel 15_k , wherein $k = 1 \dots m$) of the amplifiers having a switchable bias (of +5V; +10; or – 300V by modifications of switches 44 and 46 – see column 6, lines 8-52);

another of the operational amplifiers (channel $15_k + 1$ or $15_k - 1$ – see column 6, lines 8-11) having an adaptively switchable bias (of +5V; +10; or –300V by modifications of switches 44 and 46 – see column 6, lines 8-52); and

a controller (including control circuits 22, 211, and 212) to adaptively interconnect the plurality of operational amplifiers (between terminals 10/20 via the distributor 14 and combiner 19) to select the bias (of +5V, and/or +10V; or – 300V).

Regarding claim 12, Kibayashi discloses the another of operational amplifiers (channel $15_k + 1$ or $15_k - 1$ – see column 6, lines 8-11) adaptively switches bias (of +5V;

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+10; or –300V by modifications of switches 44 and 46) based on, at least in part, the switchable bias of the one operational amplifier (see column 4, lines 44-48; and column 6, lines 8-52).

Regarding claim 19, Kibayashi discloses (see Figs. 2 & 5) a multi-operational amplifier system comprising: first (15k, wherein $k = 1 \dots m$), second (15k+1), and third (15k+2) operational (note: the word 'operational' means these amplifiers are available and in working condition – see an English dictionary) amplifiers (15₁...15_m), each configured as an output transconductance (because the output of amplifier 152k is coupled to a resistor therefore to produce a current output) amplifier; and a controller (including blocks 22, 211, and 212 of Fig. 2) configured to adaptively interconnect the first, second, and third amplifiers (between terminals 10/20, and via the distributor 14 and combiner 19).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

c. Claims 5-6, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over MacBeth (US 5,982,230) in view of Tran (US 5,631,606). MacBeth discloses a multi (more than one amplifiers) operational/differential amplifier system comprising: first and second operational amplifiers (60/70), each having inputs (61/62; 71/72); and a controller (including switches 90-92) configured to adaptively interconnect

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the inputs (column 3, lines 56-62; and Figs. 1-6), wherein the inputs of the amplifiers (60/70) are formed by transistors (see Figs. 3-6). MacBeth does not teach or say the transistors of Figs. 3-6 are formed of NZ NMOS (i.e., native transistor) and N-type or P-type MOS transistors. Tran discloses these kinds of transistors are known and/or can be used in an amplifier system (see title, abstract, and Fig. 1B). Therefore, it would have been obvious to one person having ordinary skills in the art at the time the invention was made to utilize the transistors as suggested by Tran in forming a multi-operational amplifier system (as taught by MacBeth) which is suitable for driving low impedance loads (as suggested by Tran – see column 1, lines 6-8).

d. Claims 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kibayashi et al. (US 5,256,987) in view of Hwang et al. (US 5,604,464). Kibayashi discloses the invention of claim 19 (see the rejection of claim 19 above) except for the inclusion of the PMOS input differential pair. Hwang discloses an amplifier system comprising a PMOS input differential pair (432/434 of Fig. 4). Therefore, it would have been obvious to one person having ordinary skills in the art at the time the invention was made to utilize a PMOS input differential pair (as suggested by Hwang) to replace the field effect transistors of at least one amplifier units (15) of the amplifier system of Kibayashi for a purpose of improving gain and bandwidth of the amplifier system (column 1, lines 5-28).

4. Claims 3-4, 7, 13, 21-23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claims 14-18 are allowed.

Contact Information

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khai M. Nguyen whose telephone number is 571-272-1809. The examiner can normally be reached on 9:00 - 5:30 Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rexford (Rex) Barnie can be reached on 571-272-7492. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Khai M. Nguyen
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571-272-1809